LCI510
Live Cell Turn On/Turn Off

Kim Peifley

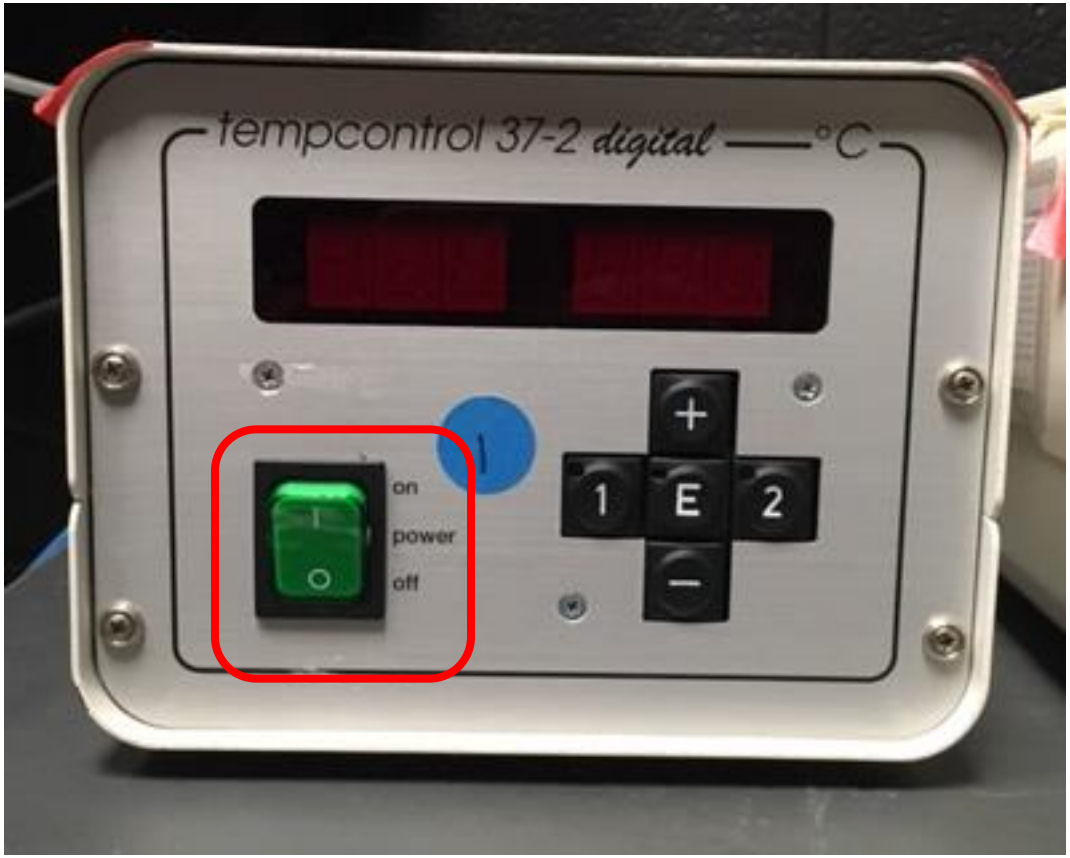
05/26/16

Important information before you start:

- **The heating unit, temperature controller and CO2 controls are kept off unless being used.**
- **The environmental chamber takes 2 hours to warm up fully and stabilize. This time should be figured in to your scheduled time.**
- **Keep all doors on the environmental chamber closed as much as possible.**
- **Keep oil inside the chamber so it is warmed to 37ºC.**

Live Cell Turn On

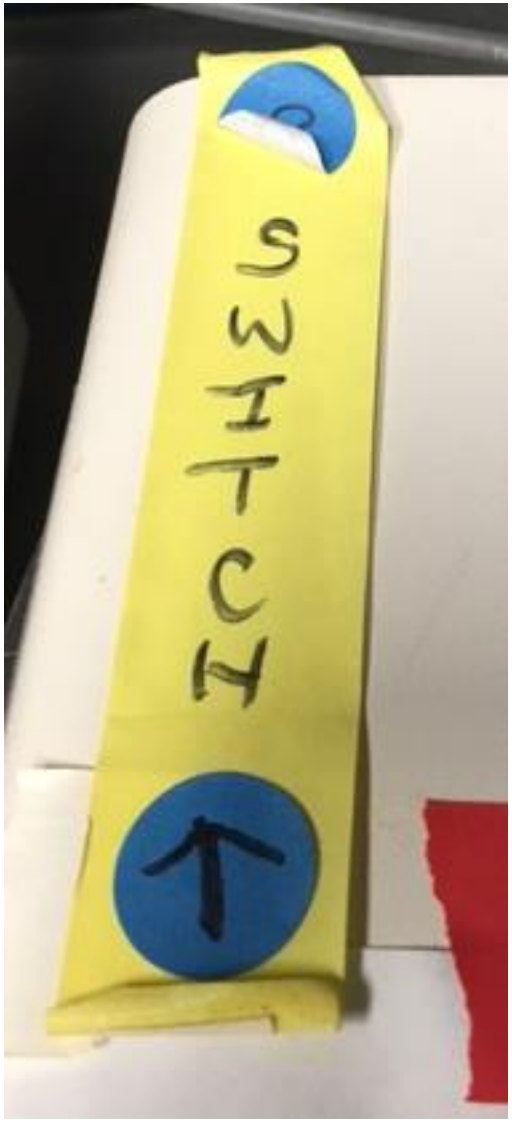
1. **Turn on the temperature controller unit.**



2. **Turn on the heating unit. This is the fan.**
3. **Make sure Heating Intensity is 2.**
4. **Make sure Ventilation Speed is 4.**

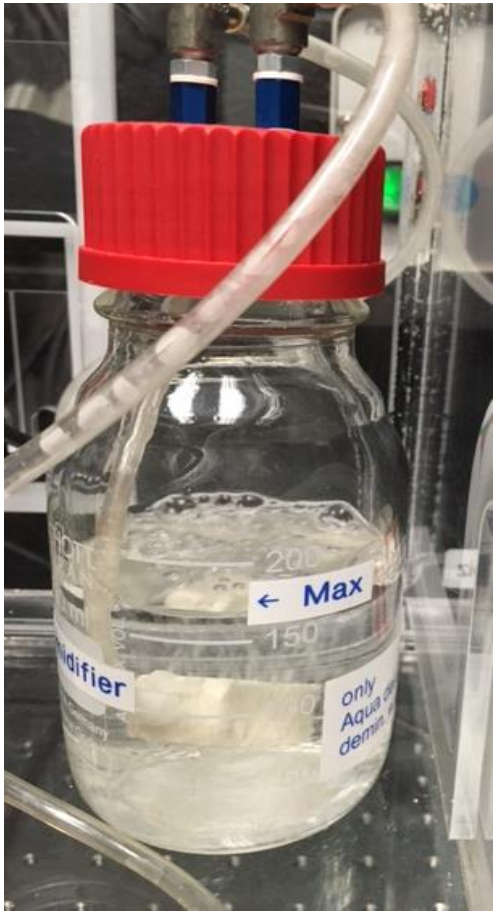
The settings should not need to be changed.
It is still important to check them.

5. **Turn on the CO2 controller unit. The switch is located at the back of the unit. There is a piece of tape indicating where to locate the switch.**

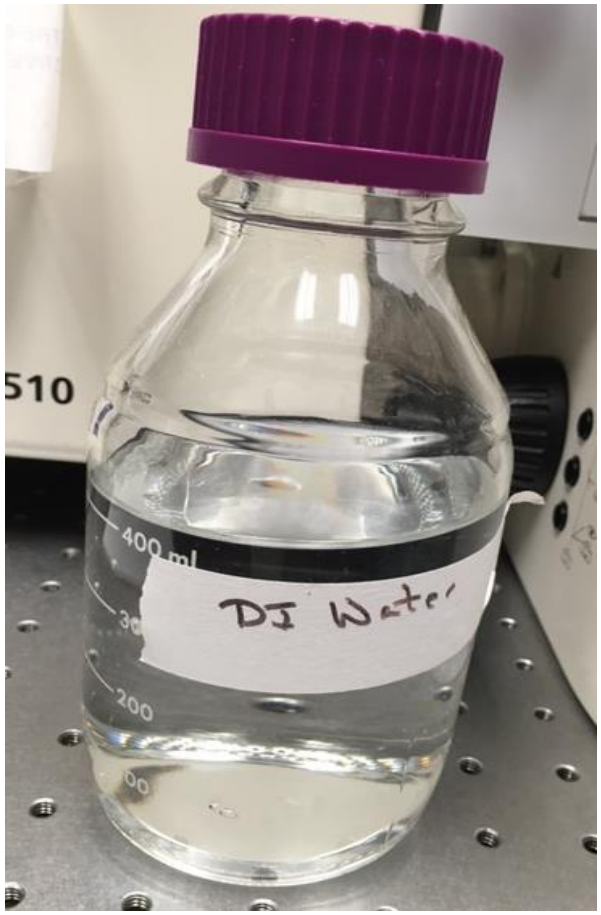


6. Check the water level in the humidifier. Refill if needed.

Because of the tubing it's easier to hold the cap and turn the bottle to unscrew the cap

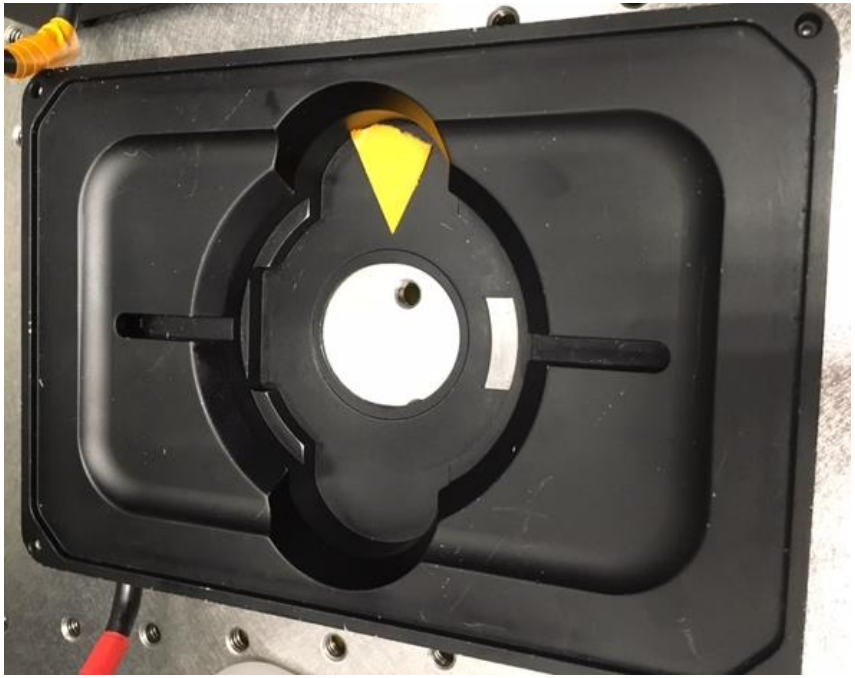


There should be a bottle of DI water in the room. Usually on the table by the light switch. If it is empty please contact Kim to refill it.



7. Select the heated stage insert that you will be using.

Dish Heated Stage Insert



Slide Heated Stage Insert

8. **Make sure the heated stage insert that you are using is plugged in to the Temperature Control Unit.**
9. **You can identify the unit at the plug end by the colored tape that is used: Orange for Slide Holder and Red for Plate Holder.**
10. **The location of the plug is indicated by the red and orange tape on the Temperature control unit.**

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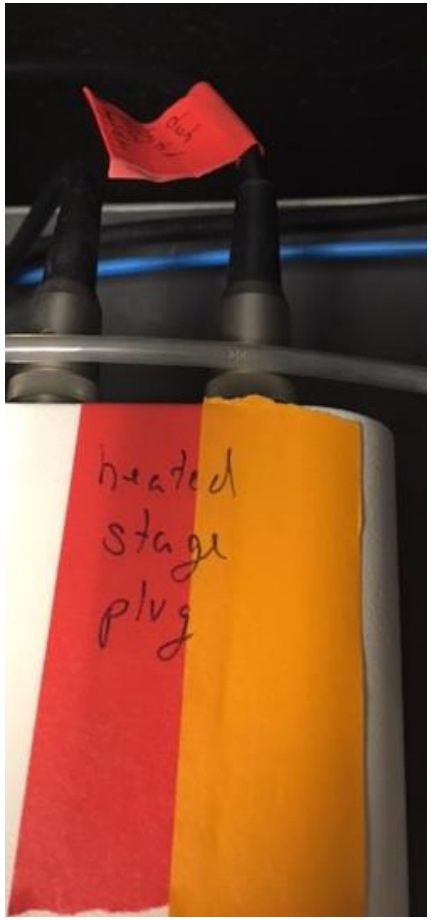
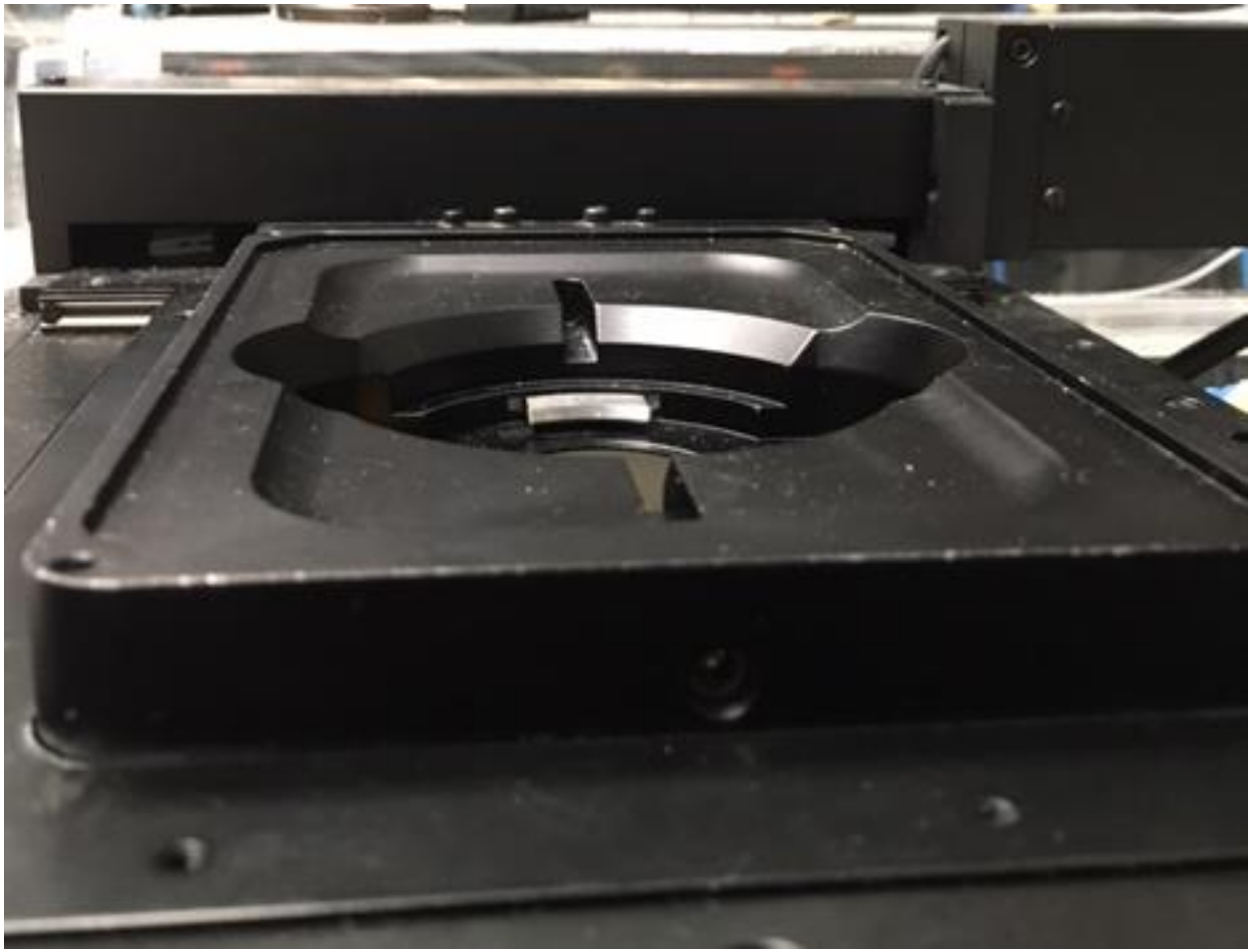
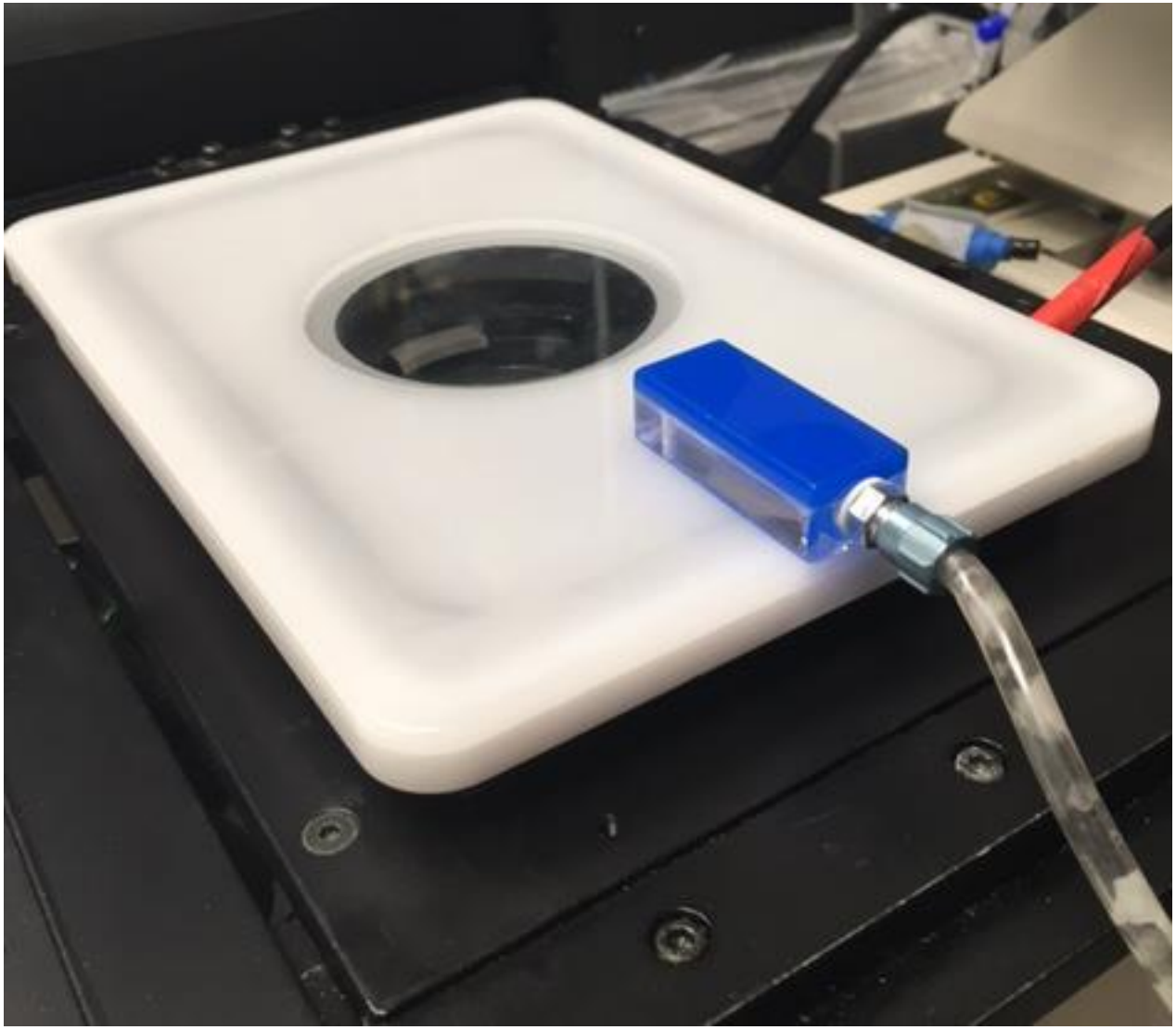


11. **Place heated sample holder on the microscope stage. This can be difficult to do so make sure the holder is securely in place. It should not be loose.**



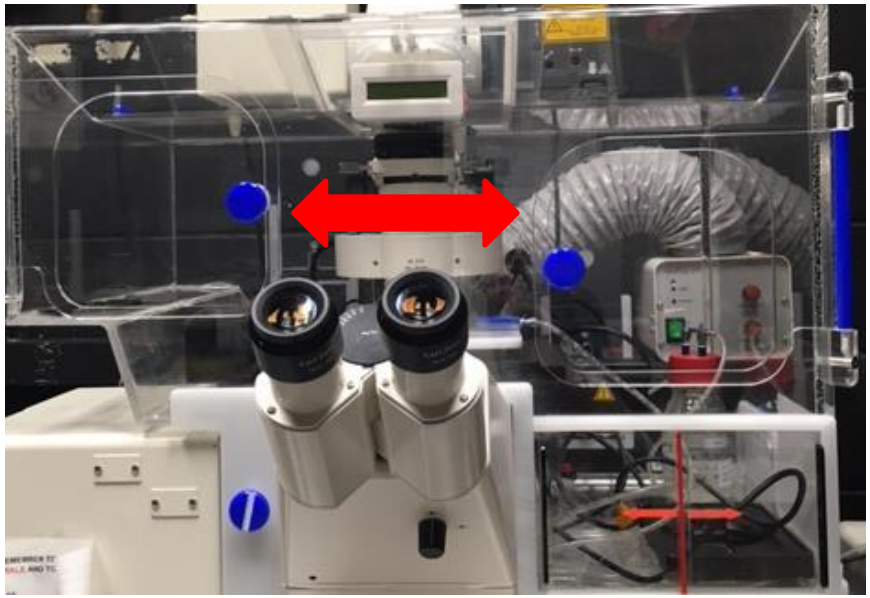
12. **Place the lid on top of the sample holder. This lid provides CO_2 and humidity to the sample.**



13. **<u>Slowly</u> lower the turret so you do not crack the glass. You may need to raise the condenser to keep this from happening. You can raise and lower the condenser using the knob on the turret [red arrow].**

14. Close the environmental chamber.

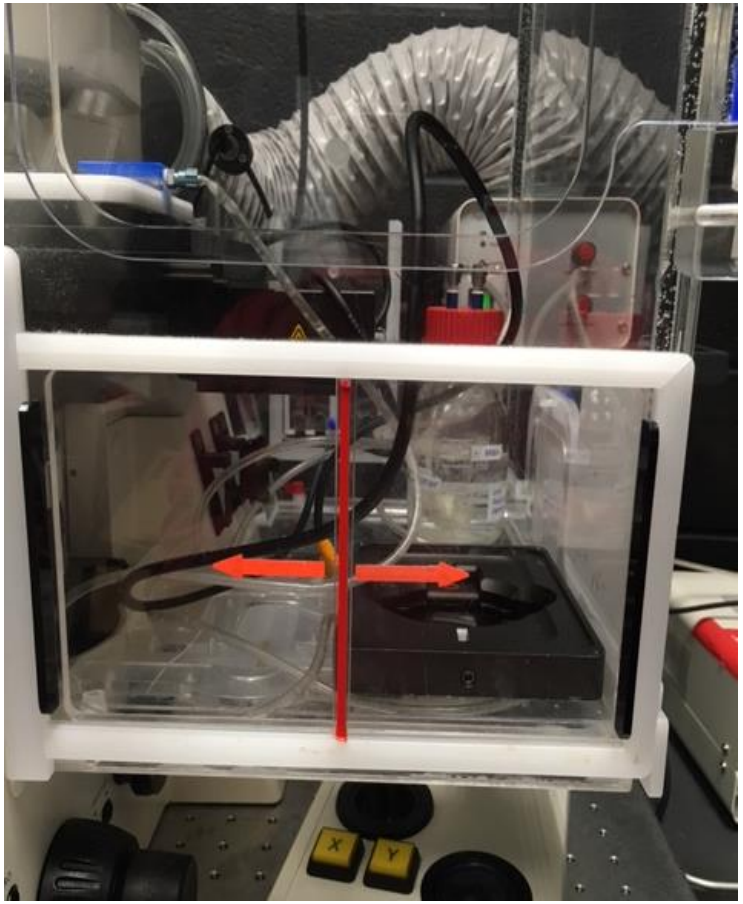
The 2 front doors



Slide the top closed

15. Check other areas of the environmental chamber to make sure they are closed.

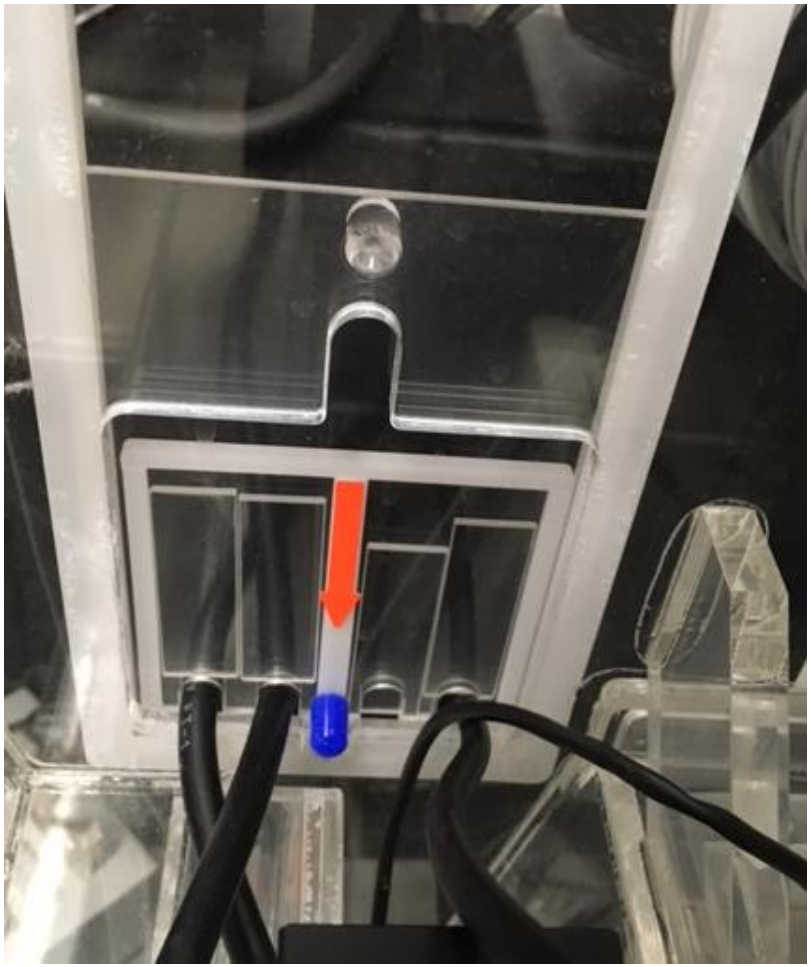
The sliding doors on the lower right side of the chamber.



15. Check other areas of the environmental chamber to make sure they are closed.

There are two areas in the back where cables can go through.
Make sure they are in the notches and the windows are down.

Back lower left side



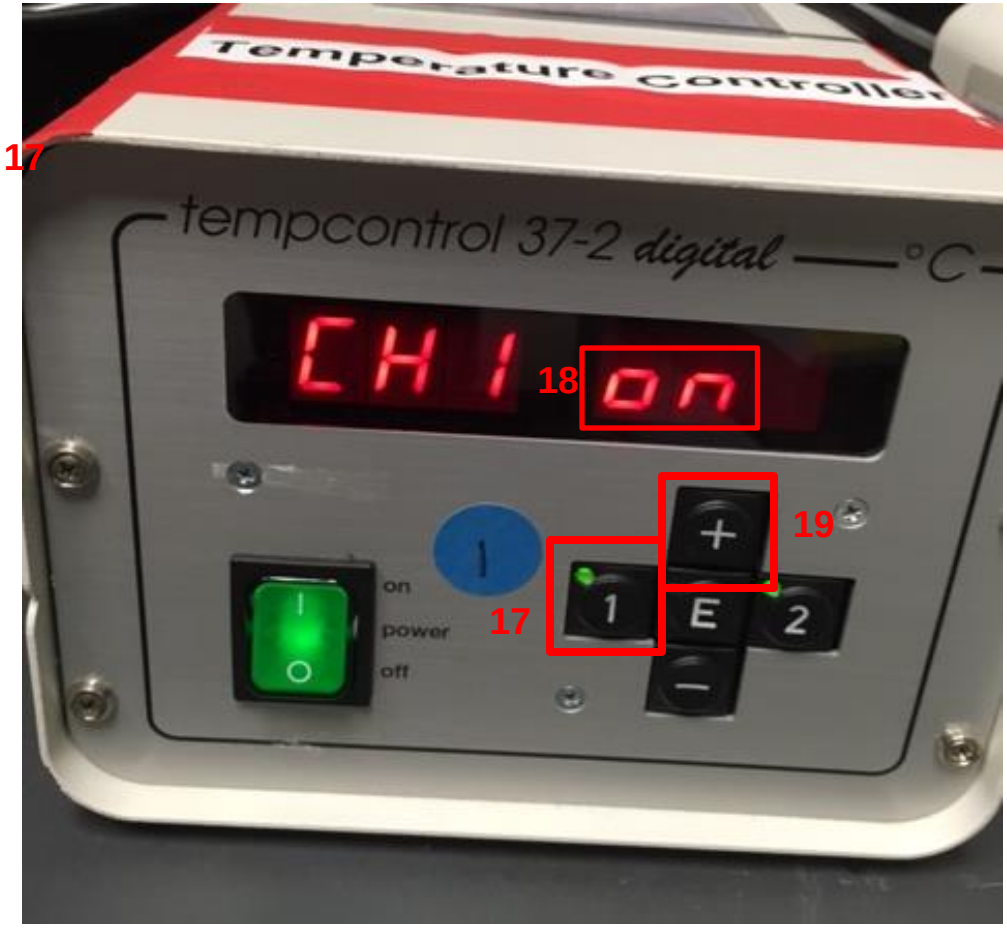
Back lower right side

16. Setting the Temperature Controller Unit

The left display is the environmental chamber temperature. The right is the heated stage temperature.

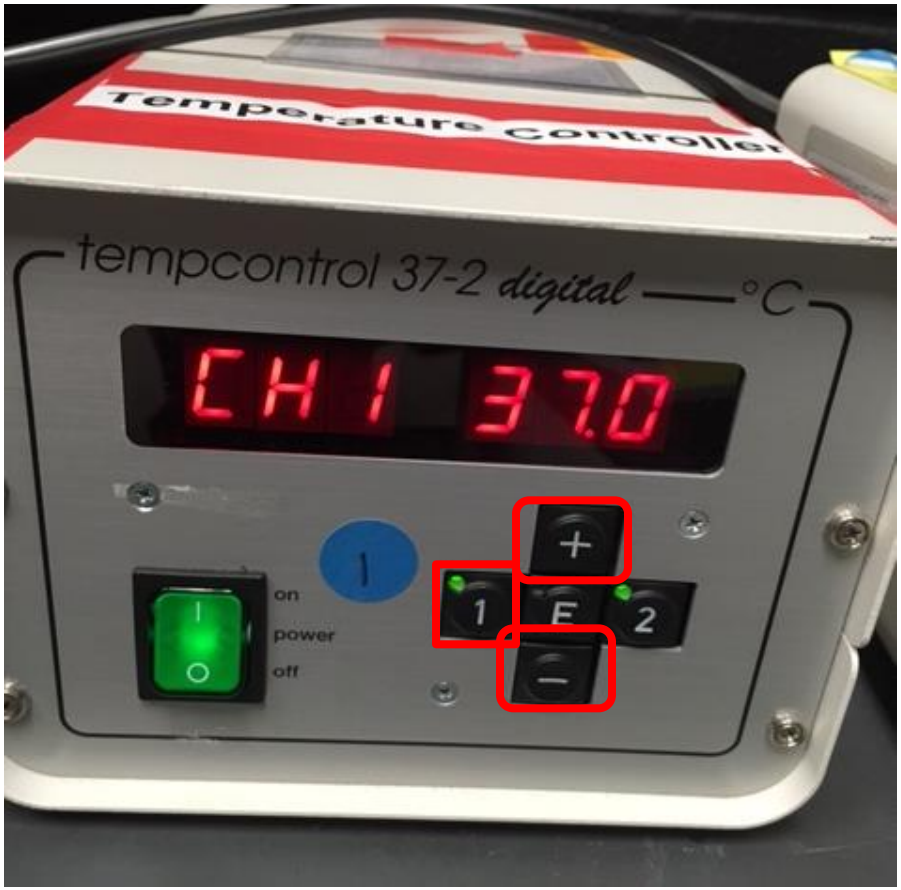
To set the temperature for the environmental chamber:

17. **Press 1 and you will see CH1 on the display.**
18. **If in the on position like you see in the photo then you are ok.**
19. **If it says CH1 off, push the + button to turn the channel on.**



20. **To adjust the temperature, press 1 again and temperature set point will display. To adjust the temperature set point use the + and – buttons.**

Always check the temperature set point. Do not assume it will always be set at 37ºC.



To set the temperature for the heated stage insert:

21. **To reach the heated stage insert controls press 2.**
22. **Repeat steps 19 and 20 to turn on the channel and adjust/set the temperature.**

Always check the temperature set point. Do not assume it will always be set at 37ºC.

23. **You will now see the current temperatures of the environmental chamber [left] and heated stage insert [right].**

To set the CO2 controller:

24. If the red light next to real is lit then you are seeing the actual CO2 level.

To adjust the CO2 settings:

25. Push the display button so that the light next to nom is lit.

26. Use the + and – buttons to adjust the CO2 setting.

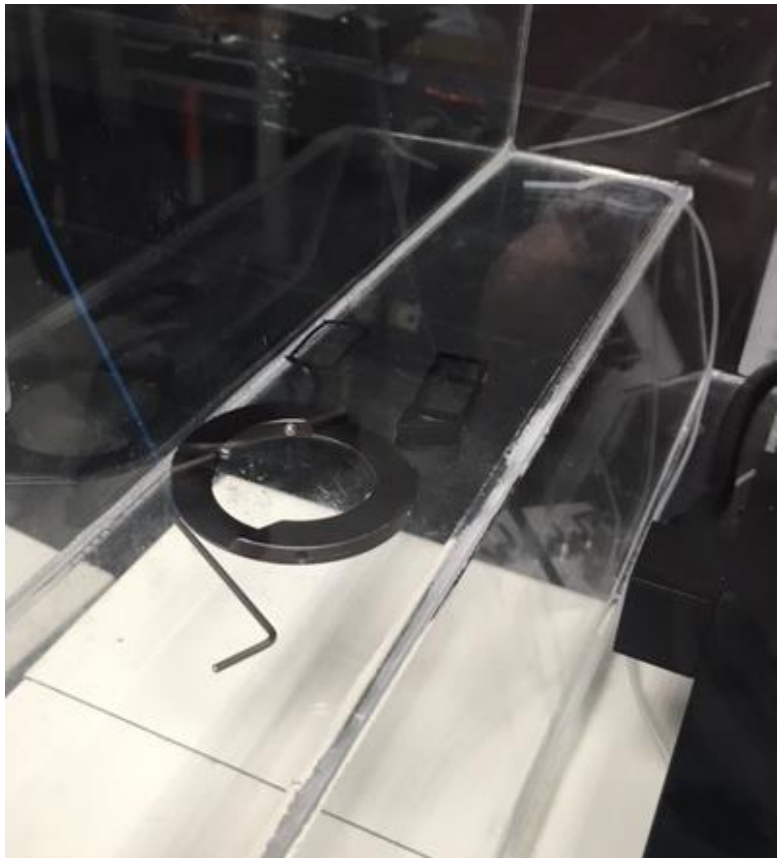
27. Push display to return back to “real’ and see the current CO2 reading.

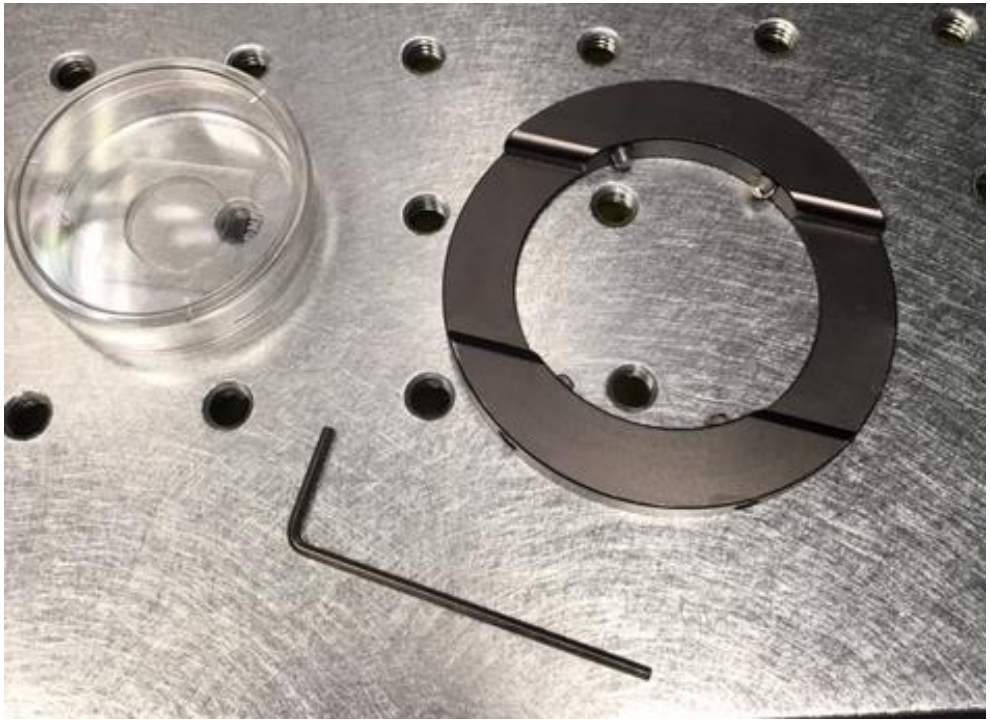
Checking the temperature control we see the environmental chamber is at 33.6ºC and the heated stage insert is already at 37ºC

28. **When both read outs are at 37ºC and you have waited approximately 1-2 hours to allow those temperatures to stabilize you can put your sample on the microscope**

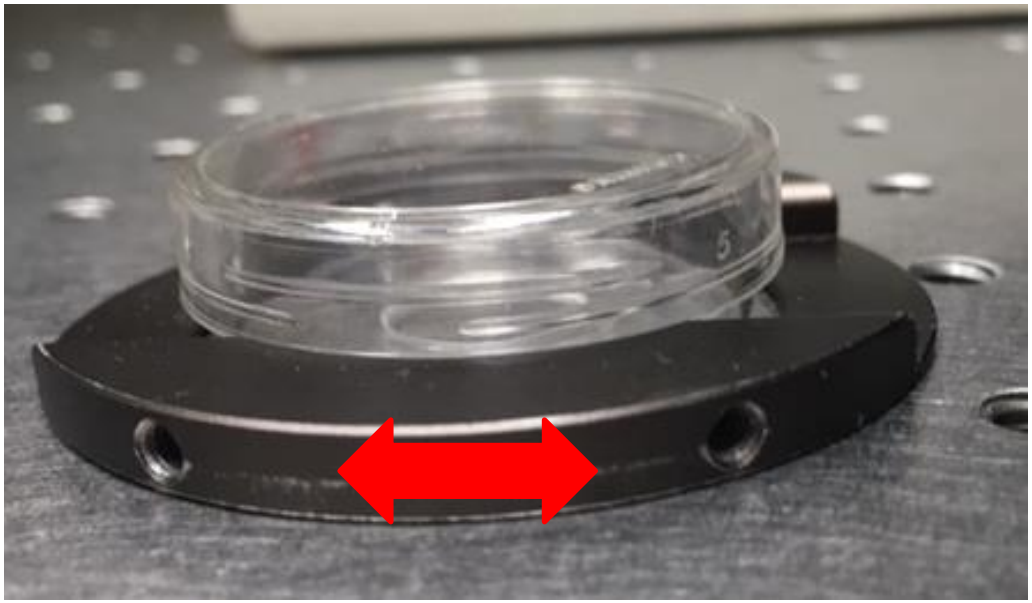
Putting your sample on to the microscope:

29. **If you are using 35mm dishes then you must first put your sample in a ring. The ring and the wrench needed to tighten it are usually located on the ledge inside the environmental chamber. It should be kept in there until ready to use so it is at 37ºC.**

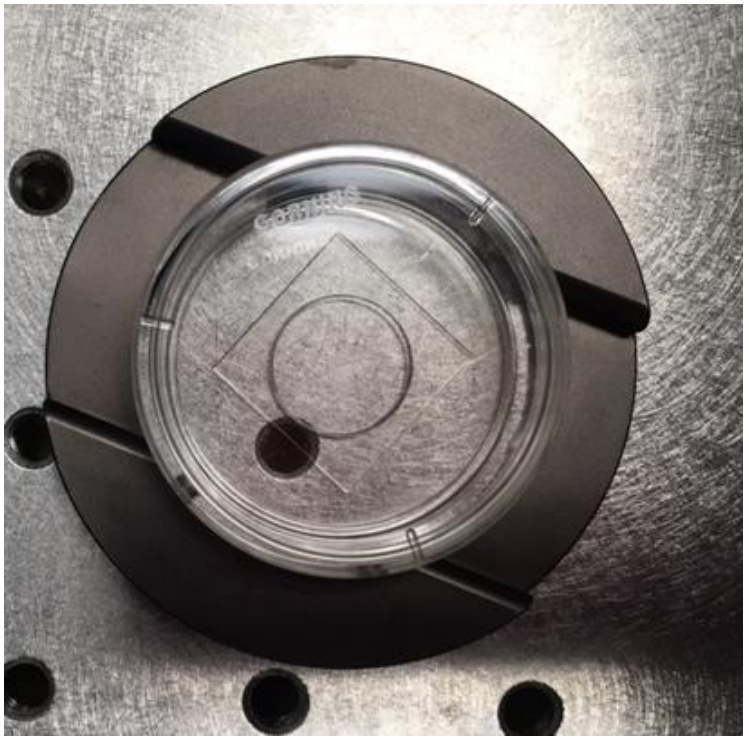




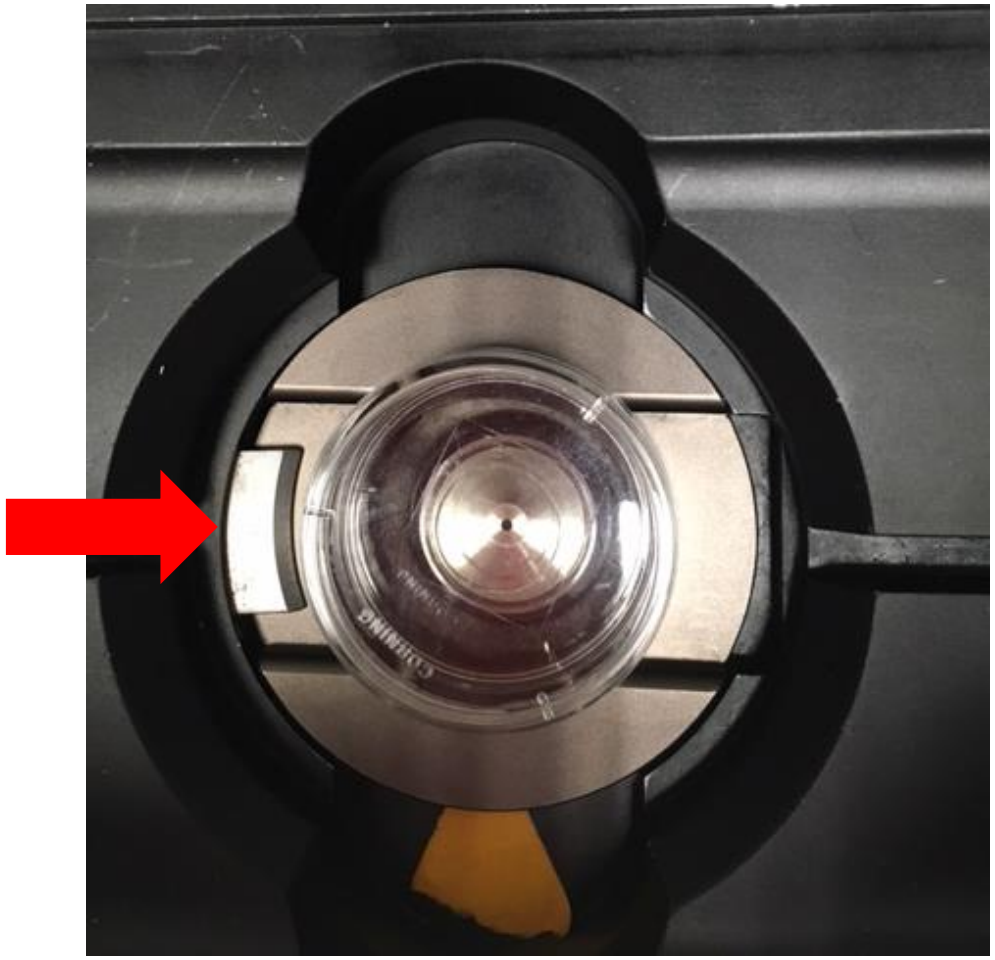
30. There are 4 screws that you need to tighten in order to secure the dish in place. Two of the holes for the screws can be seen in the photo on the right.



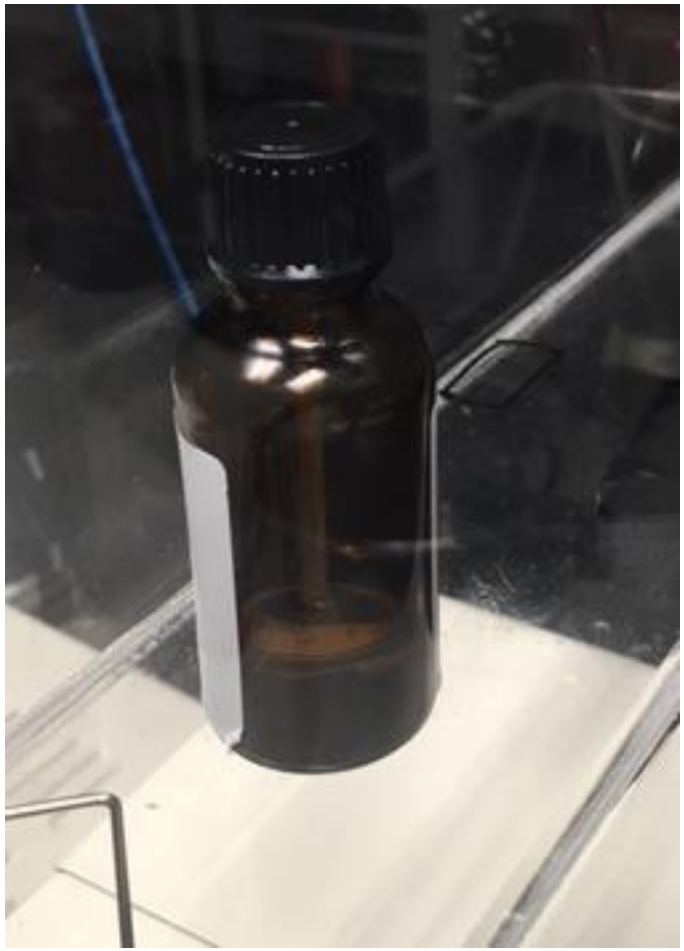
31. Make sure the dish is level with the bottom of the insert or you may experience trouble focusing. Also make sure the dish is level.
32. Do not tighten too tight or you can bend or break the bottom of the dish.



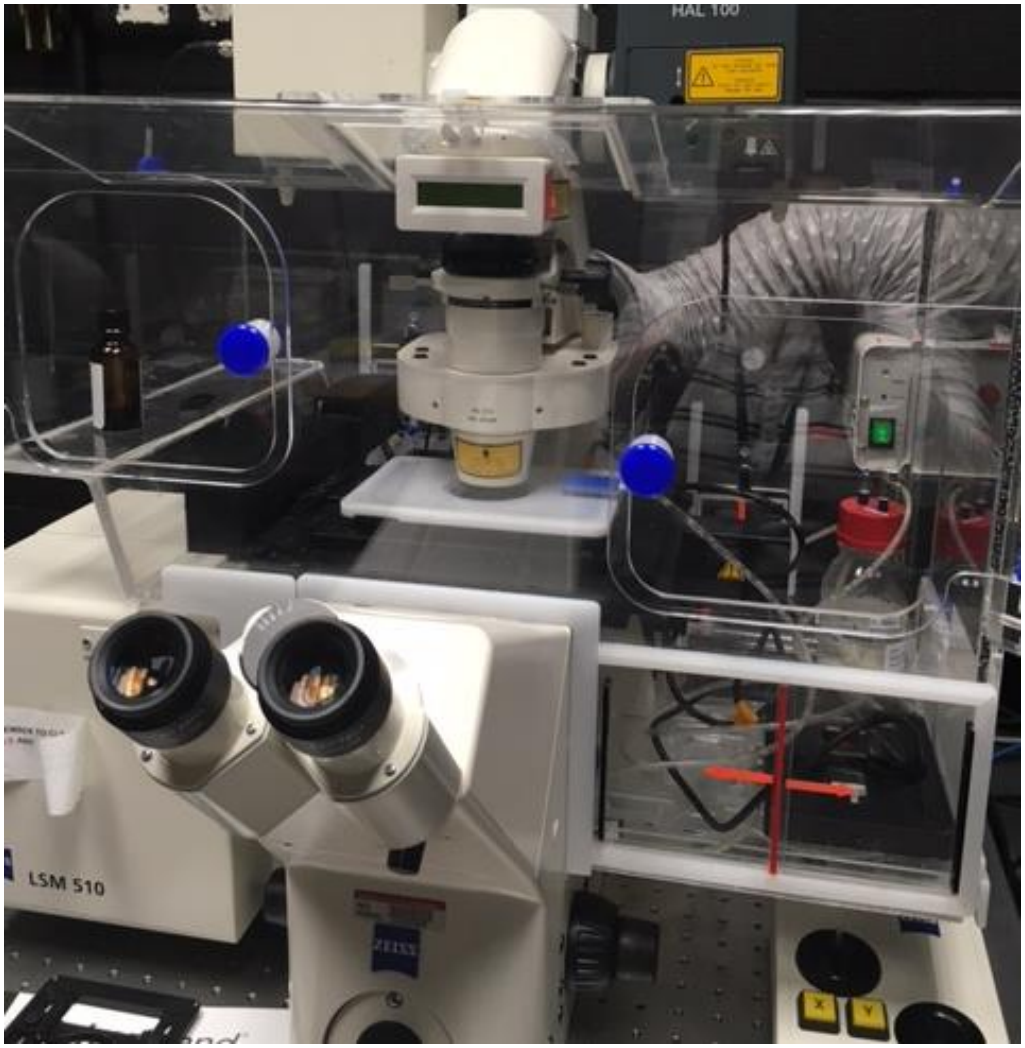
33. **To insert the dish holder into the heated chamber you need to slide the thinner end under the spring [red arrow]. This is to secure the dish in place so it doesn't move around while imaging**



34. **You will also want to put the oil in the environmental chamber to warm up so it is at 37ºC when you place oil on the objective.**



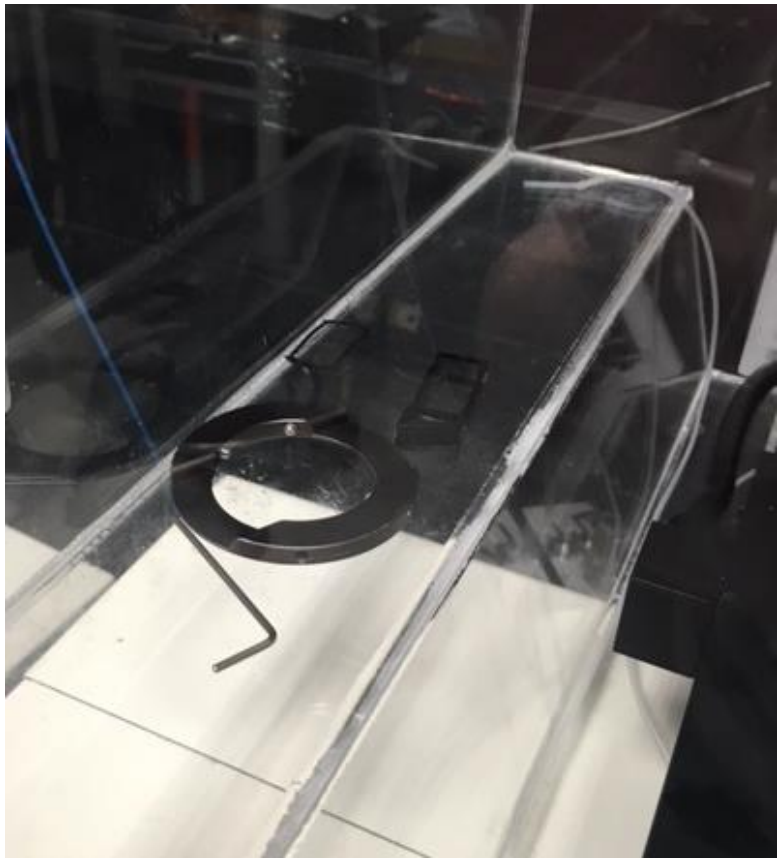
35. **Close the chamber and allow your sample to sit on the microscope for at least 15 minutes before you begin imaging. This is to allow your sample to stabilize and help prevent focus drift.**



Live Cell Turn Off

1. Remove sample from heated insert.
2. Ring inserts are stored in the chamber.
3. Remove heated insert from the stage
4. Heated inserts and lids are stored inside the chamber.
5. Clean objective.

2



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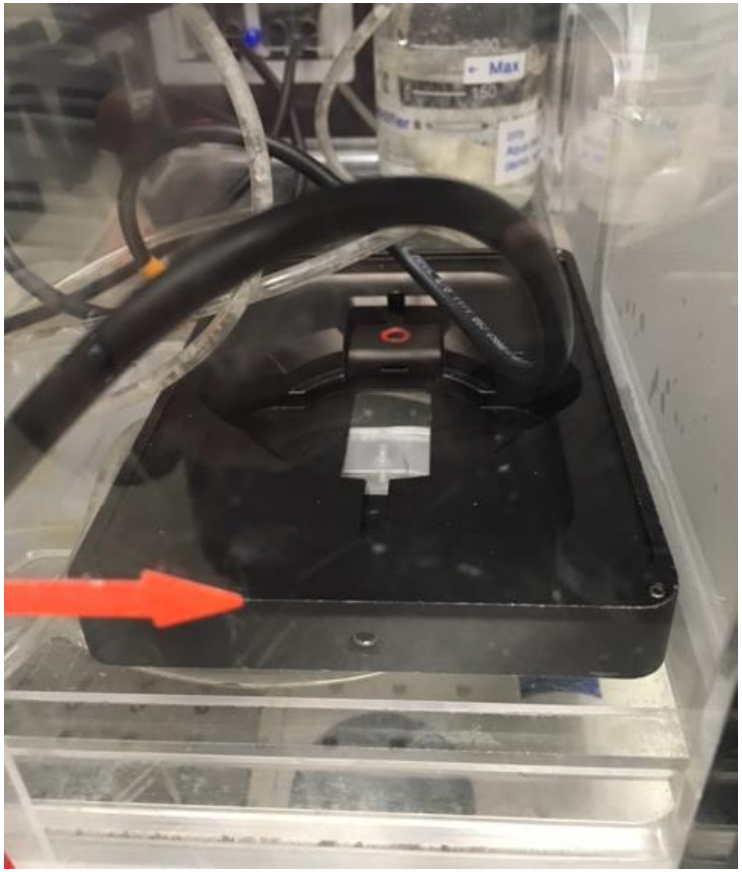
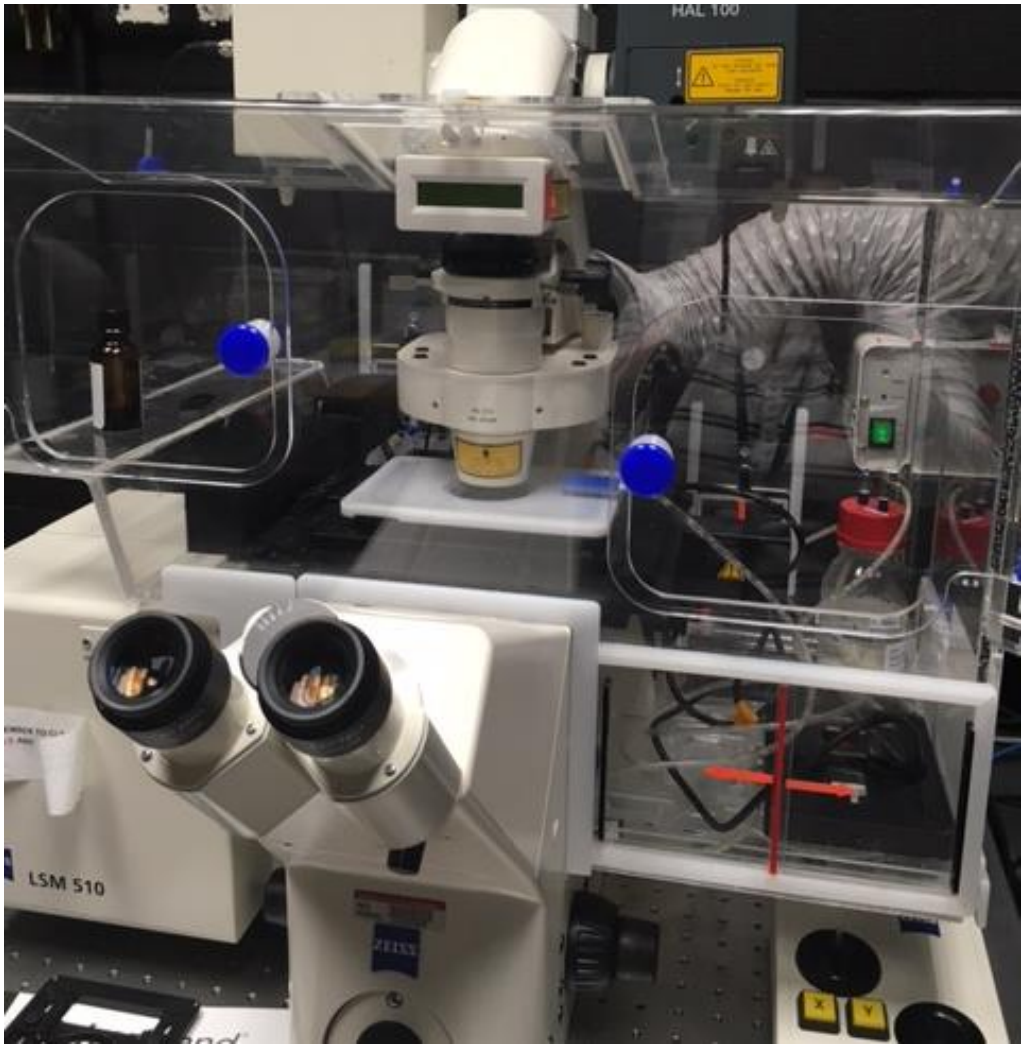
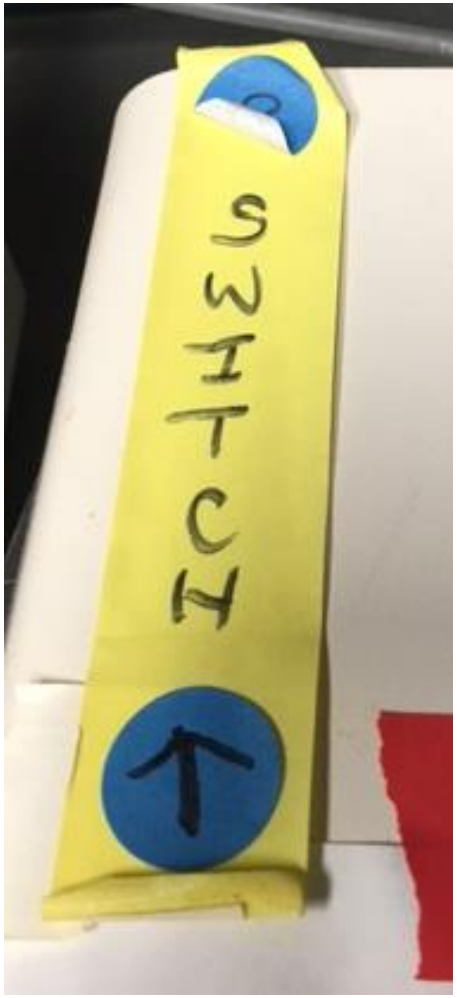


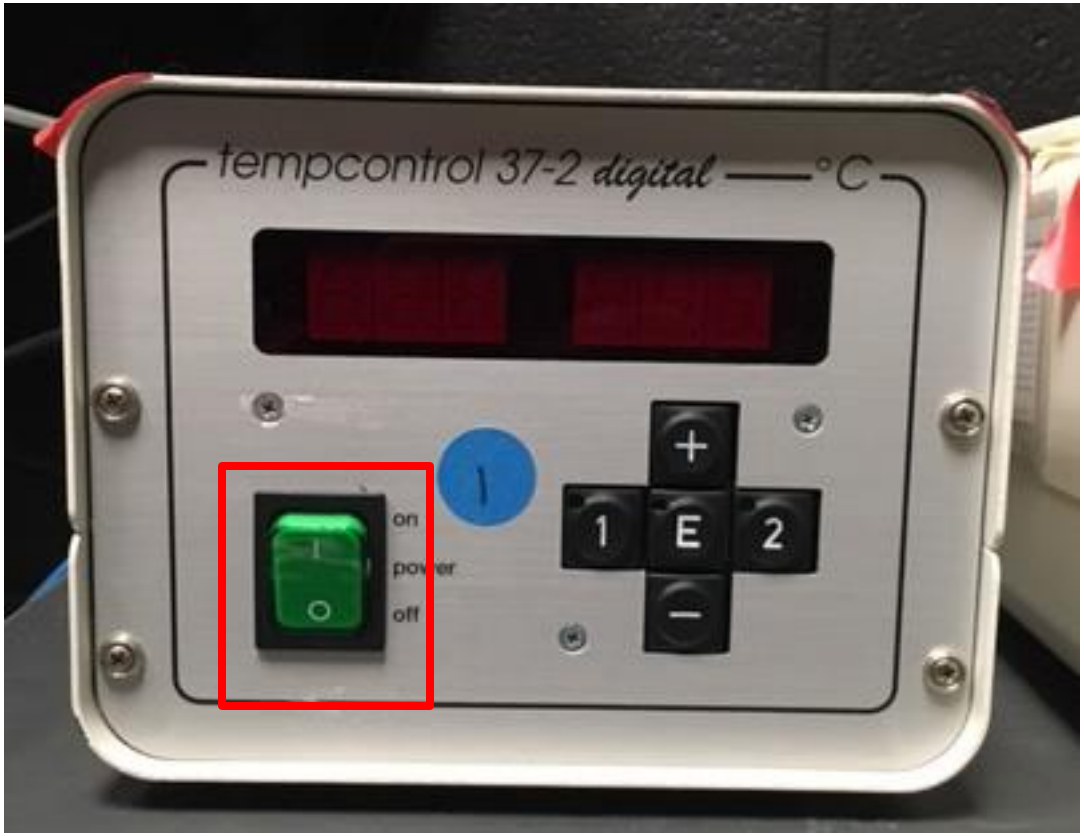
5. Close the environmental chamber.



6. **Turn off CO2 Controller.**



7. Turn off temperature controller



8. **Wait 30 minutes.**
9. **Shut off heating unit.**
10. **Follow usual turn off procedure for the microscope.**

Note: It is important that you wait 30 minutes before turning the heating unit off. The fan will burn out if you do not wait.